

What is Claimed is:

1. A signal encoding transmission apparatus comprising:

layered encoding means of structuring a transmission signal in a plurality of layers in a hierarchy, and of outputting a plurality of compressed bit streams generated by encoding the respective layered signals; and

modulating/transmitting means of (1) modulating each of the output compressed bit streams by a modulation method determined for each layer, and/or (2) transmitting the compressed bit streams by using carriers determined for each layer.

2. A signal encoding transmission apparatus according to claim 1, wherein determining the modulation method means determining a digital modulation method on the basis of a correspondence between each layer and resistance to transmission noise.

3. A signal encoding transmission apparatus according to claim 1, wherein determining the carriers means determining carriers on the basis of a correspondence between each layer and the influence of transmission noise.

4. A signal encoding transmission apparatus according to claim 2, wherein the modulation scheme is determined so that at least the compressed bit stream of the lowest layer in the hierarchy has the highest resistance to transmission noise among all of the plurality of compressed bit streams.

5. A signal encoding transmission apparatus according to

claim 3, wherein the carriers are determined so that at least the compressed bit stream of the lowest layer in the hierarchy is the least susceptible to transmission noise among all of the plurality of compressed bit streams.

6. A signal decoding receiving apparatus comprising:

receiving means of receiving compressed bit streams generated by encoding a transmission signal into a plurality of layers in a hierarchy, and (1) modulated by a modulation method determined for each layer and/or (2) transmitted by using carriers determined for each layer, and of outputting the compressed bit streams corresponding to the respective layers on the basis of first prescribed criteria;

demodulating means of demodulating the compressed bit streams on the basis of second prescribed criteria; and

layered decoding means of reconstructing the transmission signal by decoding the respectively demodulated compressed bit streams.

7. A signal decoding receiving apparatus according to claim 6, wherein the compressed bit streams to be received by the receiving means are transmitted using the carriers determined for the respective layers, and

the first prescribed criteria are the criteria based on the determination of the carriers.

8. A signal decoding receiving apparatus according to claim 6, wherein the compressed bit streams to be received by the

receiving means are modulated using the modulation methods determined for the respective layers, and

the second prescribed criteria are the criteria based on the determination of the modulation methods.

9. A signal decoding receiving apparatus according to any one of claims 6 to 8, wherein the layered decoding means is able to reconstruct the transmission signal by using at least the compressed bit stream of the lowest layer in the hierarchy among the demodulated compressed bit streams.

10. A signal encoding transmission apparatus comprising modulating/transmitting means of (1) modulating a plurality of compressed bit streams by a modulation method determined based on predetermined criteria, and/or (2) transmitting the plurality of compressed bit streams by using carriers determined based on the predetermined criteria.

11. A signal encoding transmission apparatus according to claim 10, wherein the plurality of compressed bit streams are given priorities in accordance with the predetermined criteria.

12. A signal encoding transmission apparatus according to claim 10, further comprising encoding means of generating the plurality of compressed bit streams by encoding a plurality of transmission signals respectively.

13. A signal encoding transmission apparatus according to claim 10, further comprising encoding means of generating the plurality of compressed bit streams by encoding one or more

transmission signals, and wherein

when the number of transmission signals is one, the encoding means generates the plurality of compressed bit streams by structuring the one transmission signal in a plurality of layers in a hierarchy and by encoding the respective layered signals, and

when the number of transmission signals is more than one, the encoding means generates the plurality of compressed bit streams by encoding the more than one transmission signal respectively.

14. A signal decoding receiving apparatus comprising:

receiving means of receiving compressed bit streams generated by encoding a transmission signal, and (1) modulated by a modulation method determined based on predetermined criteria and/or (2) transmitted by using carriers determined based on predetermined criteria, and for outputting a plurality of compressed bit streams on the basis of first prescribed criteria;

demodulating means of demodulating the plurality of compressed bit streams on the basis of second prescribed criteria; and

decoding means of reconstructing the transmission signal by decoding the demodulated compressed bit streams.

15. A signal decoding receiving apparatus according to claim 14, wherein the compressed bit streams to be received by the receiving means are transmitted using the carriers determined

based on the predetermined criteria, and

the first prescribed criteria are the criteria based on the determination of the carriers.

16. A signal decoding receiving apparatus according to claim 14, wherein the compressed bit streams to be received by the receiving means are modulated using the modulation methods determined based on the predetermined criteria, and

the second prescribed criteria are the criteria based on the determination of the modulation methods.

17. A signal decoding receiving apparatus according to any one of claims 14 to 16, wherein the number of transmission signals is one or more than one, and

when the number of transmission signals is one, the one transmission signal is encoded into a plurality of layers in a hierarchy, while

when the number of transmission signals is more than one, the more than one transmission signal are encoded individually, and wherein

(1) when the number of transmission signals is one, the decoding means is able to reconstruct the transmission signal by using at least the compressed bit stream of the lowest layer in the hierarchy among the plurality of compressed bit streams, and

(2) when the number of transmission signals is more than one, the decoding means is able to reconstruct the transmission

signals by using the compressed bit streams corresponding to the respective transmission signals among the plurality of compressed bit streams.

18. A program recording medium having a program and/or data recorded thereon for enabling a computer to implement all or part of the functions of all or part of the means of the invention described in ~~any one of~~ claims 1, ^{6, 10 or 14} ~~to 17~~, wherein the program recording medium is computer readable.